LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Tait Environmental Management, Inc.
701 N. Park Center Drive
Santa Ana, CA 92705
ATTN: Ms. Clara Boeru

May 16, 2007

SUBJECT: Boeing Realty Corp. Bldg C-6 Facility, Data Validation

Dear Ms. Boeru,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on May 11, 2007. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 16756:

SDG #	Fraction
IQC3058	Volatiles, Dissolved Metals, Wet Chemistry, Dissolved Gases

The data validation was performed under Tier 1, Tier 2 and Tier 3 guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Stella Cuenco

Stella S. Cuenco
Project Manager/Senior Chemist

16756COV.wpd

Attachment 1

LDC #16756 (Tait Environmenal Management, Inc. / Boeing Realty Corp., Bldg C-6 Facility)

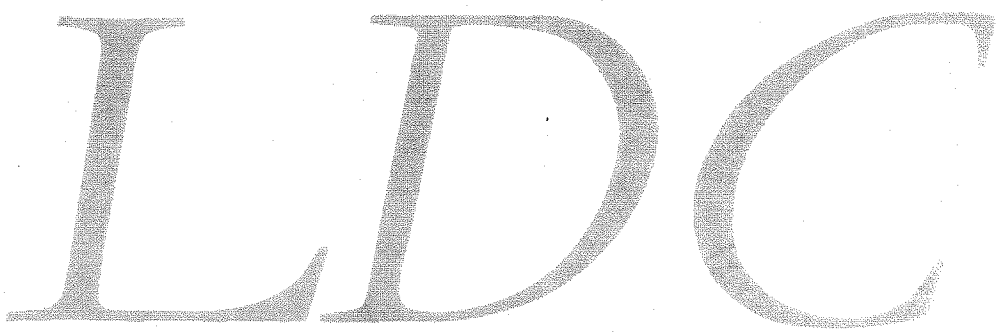
LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260B)		Diss Mn (6010B)		Diss. Gases (175)		Alk. (310.1)		NH3 (350.3)		Cl,SO_4 NO_3-N NO_2-N		O-PO_4 (300.0)		S= (376.2)		TOC (415.1)													
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	IQC3058	05/11/07	06/04/07	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	Tier I											
B	IQC3058	05/11/07	06/04/07	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0												
C	IQC3058	05/11/07	06/04/07	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0												
Total	B/SC			3	0	3	0	3	0	0	0	3	0	3	0	3	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	24

Shaded cells indicate Tier III validation (all other cells are Tier II validation). Sample counts do not include MS, MSD, or DUP's.

16756ST.wpd

Boeing Realty Corp. Bldg. C-6 Facility
Data Validation Reports
LDC# 16756

Volatiles



Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing Realty Corp. Bldg. C-6 Facility

Collection Date: March 28, 2007

LDC Report Date: May 15, 2007

Matrix: Water

Parameters: Volatiles

Validation Level: Tier 1, 2, & 3

Laboratory: TestAmerica, Inc.

Sample Delivery Group (SDG): IQC3058

Sample Identification

IRZB0081_WG032807_0001
CMW026_WG032807_0001*
IRZB0095_WG032807_0001**

*Indicates sample underwent Tier 2 review
**Indicates sample underwent Tier 3 review

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a Tier 3 review. Samples indicated by a single asterisk on the front cover underwent a Tier 2 review. Raw data were not evaluated for the samples reviewed by Tier 1 or 2 criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

Instrument performance data were not reviewed for Tier 1.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination (r^2) were greater than or equal to 0.990 .

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
2/28/07	2-Butanone	0.037 (≥0.05)	CMW026_WG032807_0001* IRZB0095_WG032807_0001** 7D03010-BLK1	J (all detects) UJ (all non-detects)	A

Initial calibration data were not reviewed for Tier 1.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/3/07	Acetone 2-Butanone 2,2-Dichloropropane 2-Hexanone	109.3 70.3 29.1 63.9	CMW026_WG032807_0001* IRZB0095_WG032807_0001** 7D03010-BLK1	J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values were within method and validation criteria.

Continuing calibration data were not reviewed for Tier 1.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
7D03010-BLK1	4/3/07	Tetrahydrofuran Trichloroethene	8.04 ug/L 0.480 ug/L	All samples in SDG IQC3058

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
IRZB0081_WG032807_0001 (4X)	Tetrahydrofuran	22 ug/L	40U ug/L
IRZB0095_WG032807_0001** (5X)	Tetrahydrofuran	27 ug/L	50U ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
7D03010-BS1	Acetone	263 (30-140)	All samples in SDG IQC3058	J (all detects)	P
	2-Butanone	237 (40-140)		J (all detects)	
	1,2-Dibromo-3-chloropropane	138 (50-135)		J (all detects)	
	2-Hexanone	211 (45-140)		J (all detects)	
	4-Methyl-2-pentanone	144 (45-140)		J (all detects)	
	1,1,2,2-Tetrachloroethane	134 (55-130)		J (all detects)	
	1,2,3-Trichloropropane	136 (60-130)		J (all detects)	

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

Internal standards data were not reviewed for Tier 1.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a Tier 3 review was performed. Raw data were not evaluated for the samples reviewed by Tier 1 or 2 criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a Tier 3 review was performed. Raw data were not evaluated for the samples reviewed by Tier 1 or 2 criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable for samples on which a Tier 3 review was performed. Raw data were not evaluated for the samples reviewed by Tier 1 or 2 criteria.

XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

Boeing Realty Corp. Bldg. C-6 Facility
Volatiles - Data Qualification Summary - SDG IQC3058

SDG	Sample	Compound	Flag	A or P	Reason
IQC3058	CMW026_WG032807_0001* IRZB0095_WG032807_0001**	2-Butanone	J (all detects) UJ (all non-detects)	A	Initial calibration (%RSD)
IQC3058	CMW026_WG032807_0001* IRZB0095_WG032807_0001**	Acetone 2-Butanone 2,2-Dichloropropane 2-Hexanone	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
IQC3058	IRZB0081_WG032807_0001 CMW026_WG032807_0001* IRZB0095_WG032807_0001**	Acetone 2-Butanone 1,2-Dibromo-3-chloropropane 2-Hexanone 4-Methyl-2-pentanone 1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	P	Laboratory control samples (%R)

Boeing Realty Corp. Bldg. C-6 Facility
Volatiles - Laboratory Blank Data Qualification Summary - SDG IQC3058

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
IQC3058	IRZB0081_WG032807_0001 (4X)	Tetrahydrofuran	40U ug/L	A
IQC3058	IRZB0095_WG032807_0001** (5X)	Tetrahydrofuran	50U ug/L	A

Boeing Realty Corp. Bldg. C-6 Facility
Volatiles - Data Qualification Summary - SDG IQC3058

SDG	Sample	Compound	Flag	A or P	Reason
IQC3058	CMW026_WG032807_0001* IRZB0095_WG032807_0001**	2-Butanone	J (all detects) UJ (all non-detects)	A	Initial calibration (%RSD)
IQC3058	CMW026_WG032807_0001* IRZB0095_WG032807_0001**	Acetone 2-Butanone 2,2-Dichloropropane 2-Hexanone	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
IQC3058	IRZB0081_WG032807_0001 CMW026_WG032807_0001* IRZB0095_WG032807_0001**	Acetone 2-Butanone 1,2-Dibromo-3-chloropropane 2-Hexanone 4-Methyl-2-pentanone 1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	P	Laboratory control samples (%R)

Boeing Realty Corp. Bldg. C-6 Facility
Volatiles - Laboratory Blank Data Qualification Summary - SDG IQC3058

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
IQC3058	IRZB0081_WG032807_0001 (4X)	Tetrahydrofuran	40U ug/L	A
IQC3058	IRZB0095_WG032807_0001** (5X)	Tetrahydrofuran	50U ug/L	A

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue, Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

TAIT Environmental/Boeing
701 N. Parkcenter Drive
Santa Ana, CA 92705
Attention: Mehmet Pehlivan

Project ID: Boeing C-6 Torrance
EM2727
Report Number: IQC3058

Sampled: 03/28/07
Received: 03/28/07

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC3058-05 (IRZB0081_WG032807_0001 - Water)									
Reporting Units: ug/l									
Acetone	EPA 8260B	7D03010	18	40	ND	4	04/03/07	04/03/07	C, L
Benzene	EPA 8260B	7D03010	1.1	4.0	**1.2**	4	04/03/07	04/03/07	J
Bromobenzene	EPA 8260B	7D03010	1.1	4.0	ND	4	04/03/07	04/03/07	
Bromochloromethane	EPA 8260B	7D03010	1.3	4.0	ND	4	04/03/07	04/03/07	
Bromodichloromethane	EPA 8260B	7D03010	1.2	4.0	ND	4	04/03/07	04/03/07	
Bromoform	EPA 8260B	7D03010	1.6	4.0	ND	4	04/03/07	04/03/07	
Bromomethane	EPA 8260B	7D03010	1.7	4.0	ND	4	04/03/07	04/03/07	
2-Butanone (MEK)	EPA 8260B	7D03010	15	20	ND	4	04/03/07	04/03/07	C, L
n-Butylbenzene	EPA 8260B	7D03010	1.5	4.0	ND	4	04/03/07	04/03/07	
sec-Butylbenzene	EPA 8260B	7D03010	1.0	4.0	ND	4	04/03/07	04/03/07	
tert-Butylbenzene	EPA 8260B	7D03010	0.88	4.0	ND	4	04/03/07	04/03/07	
Carbon Disulfide	EPA 8260B	7D03010	1.9	4.0	ND	4	04/03/07	04/03/07	
Carbon tetrachloride	EPA 8260B	7D03010	1.1	2.0	ND	4	04/03/07	04/03/07	
Chlorobenzene	EPA 8260B	7D03010	1.4	4.0	ND	4	04/03/07	04/03/07	
Chloroethane	EPA 8260B	7D03010	1.6	8.0	ND	4	04/03/07	04/03/07	
Chloroform	EPA 8260B	7D03010	1.3	4.0	**1.3**	4	04/03/07	04/03/07	J
Chloromethane	EPA 8260B	7D03010	1.6	8.0	ND	4	04/03/07	04/03/07	
2-Chlorotoluene	EPA 8260B	7D03010	1.1	4.0	ND	4	04/03/07	04/03/07	
4-Chlorotoluene	EPA 8260B	7D03010	1.2	4.0	ND	4	04/03/07	04/03/07	
1,2-Dibromo-3-chloropropane	EPA 8260B	7D03010	3.9	8.0	ND	4	04/03/07	04/03/07	L
Dibromochloromethane	EPA 8260B	7D03010	1.1	4.0	ND	4	04/03/07	04/03/07	
1,2-Dibromoethane (EDB)	EPA 8260B	7D03010	1.6	4.0	ND	4	04/03/07	04/03/07	
1,4-Dichlorobenzene	EPA 8260B	7D03010	1.5	4.0	ND	4	04/03/07	04/03/07	
1,2-Dichlorobenzene	EPA 8260B	7D03010	1.3	4.0	ND	4	04/03/07	04/03/07	
1,3-Dichlorobenzene	EPA 8260B	7D03010	1.4	4.0	ND	4	04/03/07	04/03/07	
Dichlorodifluoromethane	EPA 8260B	7D03010	3.2	4.0	ND	4	04/03/07	04/03/07	
1,2-Dichloroethane	EPA 8260B	7D03010	1.1	2.0	ND	4	04/03/07	04/03/07	
1,1-Dichloroethane	EPA 8260B	7D03010	1.1	4.0	ND	4	04/03/07	04/03/07	
1,1-Dichloroethene	EPA 8260B	7D03010	1.7	4.0	ND	4	04/03/07	04/03/07	
cis-1,2-Dichloroethene	EPA 8260B	7D03010	1.3	4.0	**56**	4	04/03/07	04/03/07	
trans-1,2-Dichloroethene	EPA 8260B	7D03010	1.1	4.0	**8.3**	4	04/03/07	04/03/07	
1,2-Dichloropropane	EPA 8260B	7D03010	1.4	4.0	ND	4	04/03/07	04/03/07	
2,2-Dichloropropane	EPA 8260B	7D03010	1.4	4.0	ND	4	04/03/07	04/03/07	
cis-1,3-Dichloropropene	EPA 8260B	7D03010	0.88	2.0	ND	4	04/03/07	04/03/07	
1,1-Dichloropropene	EPA 8260B	7D03010	1.1	4.0	ND	4	04/03/07	04/03/07	
trans-1,3-Dichloropropene	EPA 8260B	7D03010	1.3	2.0	ND	4	04/03/07	04/03/07	
Ethylbenzene	EPA 8260B	7D03010	1.0	4.0	ND	4	04/03/07	04/03/07	
Hexachlorobutadiene	EPA 8260B	7D03010	1.5	4.0	ND	4	04/03/07	04/03/07	
2-Hexanone	EPA 8260B	7D03010	10	24	ND	4	04/03/07	04/03/07	C, L
Iodomethane	EPA 8260B	7D03010	4.0	8.0	ND	4	04/03/07	04/03/07	
Isopropylbenzene	EPA 8260B	7D03010	1.0	4.0	ND	4	04/03/07	04/03/07	

TestAmerica - Irvine, CA
Nicholas Marz
Project Manager

5/25/07

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

TAIT Environmental/Boeing
701 N. Parkcenter Drive
Santa Ana, CA 92705
Attention: Mehmet Pehlivan

Project ID: Boeing C-6 Torrance
EM2727
Report Number: IQC3058

Sampled: 03/28/07
Received: 03/28/07

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC3058-05 (IRZB0081_WG032807_0001 - Water) - cont.									
Reporting Units: ug/l									
p-Isopropyltoluene	EPA 8260B	7D03010	1.1	4.0	ND	4	04/03/07	04/03/07	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	7D03010	1.3	4.0	ND	4	04/03/07	04/03/07	
Methylene chloride	EPA 8260B	7D03010	3.8	4.0	ND	4	04/03/07	04/03/07	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	7D03010	14	20	ND	4	04/03/07	04/03/07	L
n-Propylbenzene	EPA 8260B	7D03010	1.1	4.0	ND	4	04/03/07	04/03/07	
Styrene	EPA 8260B	7D03010	0.64	4.0	ND	4	04/03/07	04/03/07	
1,1,1,2-Tetrachloroethane	EPA 8260B	7D03010	1.1	4.0	ND	4	04/03/07	04/03/07	
1,1,2,2-Tetrachloroethane	EPA 8260B	7D03010	0.96	4.0	ND	4	04/03/07	04/03/07	L
Tetrachloroethene	EPA 8260B	7D03010	1.3	4.0	ND	4	04/03/07	04/03/07	
Tetrahydrofuran (THF)	EPA 8260B	7D03010	14	40	**22** 40U	4	04/03/07	04/03/07	B, J
Toluene	EPA 8260B	7D03010	1.4	4.0	ND	4	04/03/07	04/03/07	
1,2,3-Trichlorobenzene	EPA 8260B	7D03010	1.2	4.0	ND	4	04/03/07	04/03/07	
1,2,4-Trichlorobenzene	EPA 8260B	7D03010	1.9	4.0	ND	4	04/03/07	04/03/07	
1,1,2-Trichloroethane	EPA 8260B	7D03010	1.2	4.0	ND	4	04/03/07	04/03/07	
1,1,1-Trichloroethane	EPA 8260B	7D03010	1.2	4.0	ND	4	04/03/07	04/03/07	
Trichloroethene	EPA 8260B	7D03010	1.0	4.0	**17**	4	04/03/07	04/03/07	
Trichlorofluoromethane	EPA 8260B	7D03010	1.4	8.0	ND	4	04/03/07	04/03/07	
1,2,3-Trichloropropane	EPA 8260B	7D03010	1.6	4.0	ND	4	04/03/07	04/03/07	L
1,2,4-Trimethylbenzene	EPA 8260B	7D03010	0.92	4.0	ND	4	04/03/07	04/03/07	
1,3,5-Trimethylbenzene	EPA 8260B	7D03010	1.0	4.0	ND	4	04/03/07	04/03/07	
Vinyl acetate	EPA 8260B	7D03010	6.8	24	ND	4	04/03/07	04/03/07	
Xylenes, Total	EPA 8260B	7D03010	3.6	4.0	ND	4	04/03/07	04/03/07	
Surrogate: 4-Bromofluorobenzene (80-120%)					*101 %*				
Surrogate: Dibromofluoromethane (80-120%)					*109 %*				
Surrogate: Toluene-d8 (80-120%)					*110 %*				

TestAmerica - Irvine, CA
Nicholas Marz
Project Manager

4/05/1407

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

TAIT Environmental/Boeing
701 N. Parkcenter Drive
Santa Ana, CA 92705
Attention: Mehmet Pehlivan

Project ID: Boeing C-6 Torrance
EM2727
Report Number: IQC3058

Sampled: 03/28/07
Received: 03/28/07

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC3058-05RE1 (IRZB0081_WG032807_0001 - Water) - cont.									
Reporting Units: ug/l									
Vinyl chloride	EPA 8260B	7D03008	6.0	10	**1300**	20	04/03/07	04/03/07	
Surrogate: 4-Bromofluorobenzene (80-120%)					*93 %*				
Surrogate: Dibromofluoromethane (80-120%)					*90 %*				
Surrogate: Toluene-d8 (80-120%)					*98 %*				

TestAmerica - Irvine, CA
Nicholas Marz
Project Manager

4/5/07

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

TAIT Environmental/Boeing
701 N. Parkcenter Drive
Santa Ana, CA 92705
Attention: Mehmet Pehlivan

Project ID: Boeing C-6 Torrance
EM2727
Report Number: IQC3058

Sampled: 03/28/07
Received: 03/28/07

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC3058-06 (CMW026_WG032807_0001 - Water)									
Reporting Units: ug/l									
Acetone	EPA 8260B	7D03010	4.5	10	ND UJ	1	04/03/07	04/03/07	C, L
Benzene	EPA 8260B	7D03010	0.28	1.0	**0.36**	1	04/03/07	04/03/07	J
Bromobenzene	EPA 8260B	7D03010	0.27	1.0	ND	1	04/03/07	04/03/07	
Bromochloromethane	EPA 8260B	7D03010	0.32	1.0	ND	1	04/03/07	04/03/07	
Bromodichloromethane	EPA 8260B	7D03010	0.30	1.0	ND	1	04/03/07	04/03/07	
Bromoform	EPA 8260B	7D03010	0.40	1.0	ND	1	04/03/07	04/03/07	
Bromomethane	EPA 8260B	7D03010	0.42	1.0	ND	1	04/03/07	04/03/07	
2-Butanone (MEK)	EPA 8260B	7D03010	3.8	5.0	ND UJ	1	04/03/07	04/03/07	C, L
n-Butylbenzene	EPA 8260B	7D03010	0.37	1.0	ND	1	04/03/07	04/03/07	
sec-Butylbenzene	EPA 8260B	7D03010	0.25	1.0	ND	1	04/03/07	04/03/07	
tert-Butylbenzene	EPA 8260B	7D03010	0.22	1.0	ND	1	04/03/07	04/03/07	
Carbon Disulfide	EPA 8260B	7D03010	0.48	1.0	ND	1	04/03/07	04/03/07	
Carbon tetrachloride	EPA 8260B	7D03010	0.28	0.50	ND	1	04/03/07	04/03/07	
Chlorobenzene	EPA 8260B	7D03010	0.36	1.0	ND	1	04/03/07	04/03/07	
Chloroethane	EPA 8260B	7D03010	0.40	2.0	ND	1	04/03/07	04/03/07	
Chloroform	EPA 8260B	7D03010	0.33	1.0	ND	1	04/03/07	04/03/07	
Chloromethane	EPA 8260B	7D03010	0.40	2.0	ND	1	04/03/07	04/03/07	
2-Chlorotoluene	EPA 8260B	7D03010	0.28	1.0	ND	1	04/03/07	04/03/07	
4-Chlorotoluene	EPA 8260B	7D03010	0.29	1.0	ND	1	04/03/07	04/03/07	
1,2-Dibromo-3-chloropropane	EPA 8260B	7D03010	0.97	2.0	ND	1	04/03/07	04/03/07	L
Dibromochloromethane	EPA 8260B	7D03010	0.28	1.0	ND	1	04/03/07	04/03/07	
1,2-Dibromoethane (EDB)	EPA 8260B	7D03010	0.40	1.0	ND	1	04/03/07	04/03/07	
1,4-Dichlorobenzene	EPA 8260B	7D03010	0.37	1.0	ND	1	04/03/07	04/03/07	
1,2-Dichlorobenzene	EPA 8260B	7D03010	0.32	1.0	ND	1	04/03/07	04/03/07	
1,3-Dichlorobenzene	EPA 8260B	7D03010	0.35	1.0	ND	1	04/03/07	04/03/07	
Dichlorodifluoromethane	EPA 8260B	7D03010	0.79	1.0	ND	1	04/03/07	04/03/07	
1,2-Dichloroethane	EPA 8260B	7D03010	0.28	0.50	ND	1	04/03/07	04/03/07	
1,1-Dichloroethane	EPA 8260B	7D03010	0.27	1.0	**5.2**	1	04/03/07	04/03/07	
1,1-Dichloroethene	EPA 8260B	7D03010	0.42	1.0	**79**	1	04/03/07	04/03/07	
trans-1,2-Dichloroethene	EPA 8260B	7D03010	0.27	1.0	**3.2**	1	04/03/07	04/03/07	
1,2-Dichloropropane	EPA 8260B	7D03010	0.35	1.0	ND	1	04/03/07	04/03/07	
2,2-Dichloropropane	EPA 8260B	7D03010	0.34	1.0	ND UJ	1	04/03/07	04/03/07	
cis-1,3-Dichloropropene	EPA 8260B	7D03010	0.22	0.50	ND	1	04/03/07	04/03/07	
1,1-Dichloropropene	EPA 8260B	7D03010	0.28	1.0	ND	1	04/03/07	04/03/07	
trans-1,3-Dichloropropene	EPA 8260B	7D03010	0.32	0.50	ND	1	04/03/07	04/03/07	
Ethylbenzene	EPA 8260B	7D03010	0.25	1.0	ND	1	04/03/07	04/03/07	
Hexachlorobutadiene	EPA 8260B	7D03010	0.38	1.0	ND	1	04/03/07	04/03/07	
2-Hexanone	EPA 8260B	7D03010	2.6	6.0	NDUJ	1	04/03/07	04/03/07	C, L
Iodomethane	EPA 8260B	7D03010	1.0	2.0	ND	1	04/03/07	04/03/07	
Isopropylbenzene	EPA 8260B	7D03010	0.25	1.0	ND	1	04/03/07	04/03/07	
p-Isopropyltoluene	EPA 8260B	7D03010	0.28	1.0	ND	1	04/03/07	04/03/07	

TestAmerica - Irvine, CA
Nicholas Marz
Project Manager

4/4/07

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

TAIT Environmental/Boeing
701 N. Parkcenter Drive
Santa Ana, CA 92705
Attention: Mehmet Pehlivan

Project ID: Boeing C-6 Torrance
EM2727
Report Number: IQC3058

Sampled: 03/28/07
Received: 03/28/07

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC3058-06 (CMW026_WG032807_0001 - Water) - cont.									
Reporting Units: ug/l									
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	7D03010	0.32	1.0	ND	1	04/03/07	04/03/07	
Methylene chloride	EPA 8260B	7D03010	0.95	1.0	ND	1	04/03/07	04/03/07	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	7D03010	3.5	5.0	ND	1	04/03/07	04/03/07	L
n-Propylbenzene	EPA 8260B	7D03010	0.27	1.0	ND	1	04/03/07	04/03/07	
Styrene	EPA 8260B	7D03010	0.16	1.0	ND	1	04/03/07	04/03/07	
1,1,1,2-Tetrachloroethane	EPA 8260B	7D03010	0.27	1.0	ND	1	04/03/07	04/03/07	
1,1,2,2-Tetrachloroethane	EPA 8260B	7D03010	0.24	1.0	ND	1	04/03/07	04/03/07	L
Tetrachloroethene	EPA 8260B	7D03010	0.32	1.0	ND	1	04/03/07	04/03/07	
Tetrahydrofuran (THF)	EPA 8260B	7D03010	3.5	10	ND	1	04/03/07	04/03/07	
Toluene	EPA 8260B	7D03010	0.36	1.0	ND	1	04/03/07	04/03/07	
1,2,3-Trichlorobenzene	EPA 8260B	7D03010	0.30	1.0	ND	1	04/03/07	04/03/07	
1,2,4-Trichlorobenzene	EPA 8260B	7D03010	0.48	1.0	ND	1	04/03/07	04/03/07	
1,1,2-Trichloroethane	EPA 8260B	7D03010	0.30	1.0	ND	1	04/03/07	04/03/07	
1,1,1-Trichloroethane	EPA 8260B	7D03010	0.30	1.0	ND	1	04/03/07	04/03/07	
Trichloroethene	EPA 8260B	7D03010	0.26	1.0	**58**	1	04/03/07	04/03/07	
Trichlorofluoromethane	EPA 8260B	7D03010	0.34	2.0	ND	1	04/03/07	04/03/07	
1,2,3-Trichloropropane	EPA 8260B	7D03010	0.40	1.0	ND	1	04/03/07	04/03/07	L
1,2,4-Trimethylbenzene	EPA 8260B	7D03010	0.23	1.0	ND	1	04/03/07	04/03/07	
1,3,5-Trimethylbenzene	EPA 8260B	7D03010	0.26	1.0	ND	1	04/03/07	04/03/07	
Vinyl acetate	EPA 8260B	7D03010	1.7	6.0	ND	1	04/03/07	04/03/07	
Xylenes, Total	EPA 8260B	7D03010	0.90	1.0	ND	1	04/03/07	04/03/07	
Surrogate: 4-Bromofluorobenzene (80-120%)					*102 %*				
Surrogate: Dibromofluoromethane (80-120%)					*115 %*				
Surrogate: Toluene-d8 (80-120%)					*110 %*				

TestAmerica - Irvine, CA
Nicholas Marz
Project Manager

5/14/07

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

TAIT Environmental/Boeing
701 N. Parkcenter Drive
Santa Ana, CA 92705
Attention: Mehmet Pehlivan

Project ID: Boeing C-6 Torrance
EM2727
Report Number: IQC3058

Sampled: 03/28/07
Received: 03/28/07

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC3058-06RE1 (CMW026_WG032807_0001 - Water) - cont.									
Reporting Units: ug/l									
cis-1,2-Dichloroethene	EPA 8260B	7D03008	3.2	10	**530**	10	04/03/07	04/03/07	
Vinyl chloride	EPA 8260B	7D03008	3.0	5.0	**220**	10	04/03/07	04/03/07	
Surrogate: 4-Bromofluorobenzene (80-120%)					*94 %*				
Surrogate: Dibromofluoromethane (80-120%)					*90 %*				
Surrogate: Toluene-d8 (80-120%)					*99 %*				

TestAmerica - Irvine, CA
Nicholas Marz
Project Manager

4/25/07

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

TAIT Environmental/Boeing
701 N. Parkcenter Drive
Santa Ana, CA 92705
Attention: Mehmet Pehlivan

Project ID: Boeing C-6 Torrance
EM2727
Report Number: IQC3058

Sampled: 03/28/07
Received: 03/28/07

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC3058-08 (IRZB0095_WG032807_0001 - Water)									
Reporting Units: ug/l									
Acetone	EPA 8260B	7D03010	22	50	ND UJ	5	04/03/07	04/03/07	C, L
Benzene	EPA 8260B	7D03010	1.4	5.0	ND	5	04/03/07	04/03/07	
Bromobenzene	EPA 8260B	7D03010	1.4	5.0	ND	5	04/03/07	04/03/07	
Bromochloromethane	EPA 8260B	7D03010	1.6	5.0	ND	5	04/03/07	04/03/07	
Bromodichloromethane	EPA 8260B	7D03010	1.5	5.0	ND	5	04/03/07	04/03/07	
Bromoform	EPA 8260B	7D03010	2.0	5.0	ND	5	04/03/07	04/03/07	
Bromomethane	EPA 8260B	7D03010	2.1	5.0	ND	5	04/03/07	04/03/07	
2-Butanone (MEK)	EPA 8260B	7D03010	19	25	ND UJ	5	04/03/07	04/03/07	C, L
n-Butylbenzene	EPA 8260B	7D03010	1.8	5.0	ND	5	04/03/07	04/03/07	
sec-Butylbenzene	EPA 8260B	7D03010	1.2	5.0	ND	5	04/03/07	04/03/07	
tert-Butylbenzene	EPA 8260B	7D03010	1.1	5.0	ND	5	04/03/07	04/03/07	
Carbon Disulfide	EPA 8260B	7D03010	2.4	5.0	ND	5	04/03/07	04/03/07	
Carbon tetrachloride	EPA 8260B	7D03010	1.4	2.5	ND	5	04/03/07	04/03/07	
Chlorobenzene	EPA 8260B	7D03010	1.8	5.0	ND	5	04/03/07	04/03/07	
Chloroethane	EPA 8260B	7D03010	2.0	10	ND	5	04/03/07	04/03/07	
Chloroform	EPA 8260B	7D03010	1.6	5.0	ND	5	04/03/07	04/03/07	
Chloromethane	EPA 8260B	7D03010	2.0	10	ND	5	04/03/07	04/03/07	
2-Chlorotoluene	EPA 8260B	7D03010	1.4	5.0	ND	5	04/03/07	04/03/07	
4-Chlorotoluene	EPA 8260B	7D03010	1.4	5.0	ND	5	04/03/07	04/03/07	
1,2-Dibromo-3-chloropropane	EPA 8260B	7D03010	4.8	10	ND	5	04/03/07	04/03/07	L
Dibromochloromethane	EPA 8260B	7D03010	1.4	5.0	ND	5	04/03/07	04/03/07	
1,2-Dibromoethane (EDB)	EPA 8260B	7D03010	2.0	5.0	ND	5	04/03/07	04/03/07	
1,4-Dichlorobenzene	EPA 8260B	7D03010	1.8	5.0	ND	5	04/03/07	04/03/07	
1,2-Dichlorobenzene	EPA 8260B	7D03010	1.6	5.0	ND	5	04/03/07	04/03/07	
1,3-Dichlorobenzene	EPA 8260B	7D03010	1.8	5.0	ND	5	04/03/07	04/03/07	
Dichlorodifluoromethane	EPA 8260B	7D03010	4.0	5.0	ND	5	04/03/07	04/03/07	
1,2-Dichloroethane	EPA 8260B	7D03010	1.4	2.5	ND	5	04/03/07	04/03/07	
1,1-Dichloroethane	EPA 8260B	7D03010	1.4	5.0	ND	5	04/03/07	04/03/07	
1,1-Dichloroethene	EPA 8260B	7D03010	2.1	5.0	**4.0**	5	04/03/07	04/03/07	J
cis-1,2-Dichloroethene	EPA 8260B	7D03010	1.6	5.0	**330**	5	04/03/07	04/03/07	
trans-1,2-Dichloroethene	EPA 8260B	7D03010	1.4	5.0	**5.5**	5	04/03/07	04/03/07	
1,2-Dichloropropane	EPA 8260B	7D03010	1.8	5.0	ND	5	04/03/07	04/03/07	
2,2-Dichloropropane	EPA 8260B	7D03010	1.7	5.0	ND UJ	5	04/03/07	04/03/07	
cis-1,3-Dichloropropene	EPA 8260B	7D03010	1.1	2.5	ND	5	04/03/07	04/03/07	
1,1-Dichloropropene	EPA 8260B	7D03010	1.4	5.0	ND	5	04/03/07	04/03/07	
trans-1,3-Dichloropropene	EPA 8260B	7D03010	1.6	2.5	ND	5	04/03/07	04/03/07	
Ethylbenzene	EPA 8260B	7D03010	1.2	5.0	ND	5	04/03/07	04/03/07	
Hexachlorobutadiene	EPA 8260B	7D03010	1.9	5.0	ND	5	04/03/07	04/03/07	
2-Hexanone	EPA 8260B	7D03010	13	30	ND UJ	5	04/03/07	04/03/07	C, L
Iodomethane	EPA 8260B	7D03010	5.0	10	ND	5	04/03/07	04/03/07	
Isopropylbenzene	EPA 8260B	7D03010	1.2	5.0	ND	5	04/03/07	04/03/07	

TestAmerica - Irvine, CA
Nicholas Marz
Project Manager

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

TAIT Environmental/Boeing
701 N. Parkcenter Drive
Santa Ana, CA 92705
Attention: Mehmet Pehlivan

Project ID: Boeing C-6 Torrance
EM2727
Report Number: IQC3058

Sampled: 03/28/07
Received: 03/28/07

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC3058-08 (IRZB0095_WG032807_0001 - Water) - cont.									
Reporting Units: ug/l									
p-Isopropyltoluene	EPA 8260B	7D03010	1.4	5.0	ND	5	04/03/07	04/03/07	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	7D03010	1.6	5.0	ND	5	04/03/07	04/03/07	
Methylene chloride	EPA 8260B	7D03010	4.8	5.0	ND	5	04/03/07	04/03/07	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	7D03010	18	25	ND	5	04/03/07	04/03/07	L
n-Propylbenzene	EPA 8260B	7D03010	1.4	5.0	ND	5	04/03/07	04/03/07	
Styrene	EPA 8260B	7D03010	0.80	5.0	ND	5	04/03/07	04/03/07	
1,1,1,2-Tetrachloroethane	EPA 8260B	7D03010	1.4	5.0	ND	5	04/03/07	04/03/07	
1,1,2,2-Tetrachloroethane	EPA 8260B	7D03010	1.2	5.0	ND	5	04/03/07	04/03/07	L
Tetrachloroethene	EPA 8260B	7D03010	1.6	5.0	**4.7**	5	04/03/07	04/03/07	J
Tetrahydrofuran (THF)	EPA 8260B	7D03010	18	50	**27** 504	5	04/03/07	04/03/07	B, J
Toluene	EPA 8260B	7D03010	1.8	5.0	ND	5	04/03/07	04/03/07	
1,2,3-Trichlorobenzene	EPA 8260B	7D03010	1.5	5.0	ND	5	04/03/07	04/03/07	
1,2,4-Trichlorobenzene	EPA 8260B	7D03010	2.4	5.0	ND	5	04/03/07	04/03/07	
1,1,2-Trichloroethane	EPA 8260B	7D03010	1.5	5.0	ND	5	04/03/07	04/03/07	
1,1,1-Trichloroethane	EPA 8260B	7D03010	1.5	5.0	ND	5	04/03/07	04/03/07	
Trichloroethene	EPA 8260B	7D03010	1.3	5.0	**37**	5	04/03/07	04/03/07	
Trichlorofluoromethane	EPA 8260B	7D03010	1.7	10	ND	5	04/03/07	04/03/07	
1,2,3-Trichloropropane	EPA 8260B	7D03010	2.0	5.0	ND	5	04/03/07	04/03/07	L
1,2,4-Trimethylbenzene	EPA 8260B	7D03010	1.2	5.0	ND	5	04/03/07	04/03/07	
1,3,5-Trimethylbenzene	EPA 8260B	7D03010	1.3	5.0	ND	5	04/03/07	04/03/07	
Vinyl acetate	EPA 8260B	7D03010	8.5	30	ND	5	04/03/07	04/03/07	
Xylenes, Total	EPA 8260B	7D03010	4.5	5.0	ND	5	04/03/07	04/03/07	
Surrogate: 4-Bromofluorobenzene (80-120%)					*102 %*				
Surrogate: Dibromofluoromethane (80-120%)					*109 %*				
Surrogate: Toluene-d8 (80-120%)					*109 %*				

TestAmerica - Irvine, CA
Nicholas Marz
Project Manager

4/02/07

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

TAIT Environmental/Boeing
701 N. Parkcenter Drive
Santa Ana, CA 92705
Attention: Mehmet Pehlivan

Project ID: Boeing C-6 Torrance
EM2727
Report Number: IQC3058

Sampled: 03/28/07
Received: 03/28/07

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC3058-08RE1 (IRZB0095_WG032807_0001 - Water) - cont.									
Reporting Units: ug/l									
Vinyl chloride	EPA 8260B	7D03008	6.0	10	**1500**	20	04/03/07	04/03/07	
Surrogate: 4-Bromofluorobenzene (80-120%)					*94 %*				
Surrogate: Dibromofluoromethane (80-120%)					*94 %*				
Surrogate: Toluene-d8 (80-120%)					*98 %*				

TestAmerica - Irvine, CA
Nicholas Marz
Project Manager

4/5/07

LDC #: 16756A1
SDG #: IQC3058
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Tier 1/2/3

Date: 5/12/07
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/28/07
II.	GC/MS Instrument performance check	A	Not reviewed for Tier I validation.
III.	Initial calibration	SW	Not reviewed for Tier I validation.
IV.	Continuing calibration	SW	Not reviewed for Tier I validation.
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	client specified
VIII.	Laboratory control samples	SW	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	Not reviewed for Tier I & II validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for Tier I & II validation.
XIII.	Tentatively identified compounds (TICs)	N	Not reviewed for Tier I & II validation. not Reported
XIV.	System performance	A	Not reviewed for Tier I & II validation.
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: * Indicates sample underwent Tier I validation **Indicates sample underwent Tier III validation

5	1 \ IRZB0081_WG032807_0001* (2=C, water)	11 \	7D03010-BLK1	21		31		
6	2 \ CMW026_WG032807_0001 (2=C, RSQ)	12 2	7D03008-BLK1	22		32		
8	3 \ IRZB0095_WG032807_0001** (2=C)	13		23		33		
	4	14		24		34		
	5	15		25		35		
	6	16		26		36		
	7	17		27		37		
	8	18		28		38		
	9	19		29		39		
	10	20		30		40		

LDC #: 16756A1
SDG #: see cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: [illegible]
2nd Reviewer: [illegible]

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation?	✓			
Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	NA	✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			

DC #: 16756A1
SDG #: see cover

VALIDATION FINDINGS CHECKLIST

Page: 3 of 2
Reviewer: [illegible]
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within + 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			✓	
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.				
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target compounds were detected in the field duplicates.			✓	
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	S. Trichloroethene	KK. Trichlorofluoromethane	CCC. tert-Butylbenzene	UUU. 1,2-Dichlorotetrafluoroethane
B. Bromomethane	T. Dibromochloromethane	LL. Methyl-tert-butyl ether	DDD. 1,2,4-Trimethylbenzene	VVV. 4-Ethyltoluene
C. Vinyl chorlde**	U. 1,1,2-Trichloroethane	MM. 1,2-Dibromo-3-chloropropane	EEE. sec-Butylbenzene	WWW. Ethanol
D. Chloroethane	V. Benzene	NN. Methyl ethyl ketone	FFF. 1,3-Dichlorobenzene	XXX. Di-isopropyl ether
E. Methylene chloride	W. trans-1,3-Dichloropropene	OO. 2,2-Dichloropropane	GGG. p-Isopropyltoluene	YYY. tert-Butanol
F. Acetone	X. Bromoform*	PP. Bromochloromethane	HHH. 1,4-Dichlorobenzene	ZZZ. tert-Butyl alcohol
G. Carbon disulfide	Y. 4-Methyl-2-pentanone	QQ. 1,1-Dichloropropene	III. n-Butylbenzene	AAAA. Ethyl tert-butyl ether
H. 1,1-Dichloroethene**	Z. 2-Hexanone	RR. Dibromomethane	JJJ. 1,2-Dichlorobenzene	BBBB. tert-Amyl methyl ether
I. 1,1-Dichloroethane*	AA. Tetrachloroethene	SS. 1,3-Dichloropropane	KKK. 1,2,4-Trichlorobenzene	CCCC.1-Chlorohexane
J. 1,2-Dichloroethene, total	BB. 1,1,2,2-Tetrachloroethane*	TT. 1,2-Dibromoethane	LLL. Hexachlorobutadiene	DDDD. Isopropyl alcohol
K. Chloroform**	CC. Toluene**	UU. 1,1,1,2-Tetrachloroethane	MMM. Naphthalene	EEEE. Acetonitrile
L. 1,2-Dichloroethane	DD. Chlorobenzene*	VV. Isopropylbenzene	NNN. 1,2,3-Trichlorobenzene	FFFF. Acrolein
M. 2-Butanone	EE. Ethylbenzene**	WW. Bromobenzene	OOO. 1,3,5-Trichlorobenzene	GGGG. Acrylonitrile
N. 1,1,1-Trichloroethane	FF. Styrene	XX. 1,2,3-Trichloropropane	PPP. trans-1,2-Dichloroethene	HHHH. 1,4-Dioxane
O. Carbon tetrachloride	GG. Xylenes, total	YY. n-Propylbenzene	QQQ. cis-1,2-Dichloroethene	IIII. Isobutyl alcohol
P. Bromodichloromethane	HH. Vinyl acetate	ZZ. 2-Chlorotoluene	RRR. m,p-Xylenes	JJJJ. Methacrylonitrile
Q. 1,2-Dichloropropane**	II. 2-Chloroethylvinyl ether	AAA. 1,3,5-Trimethylbenzene	SSS. o-Xylene	KKKK. Propionitrile
R. cis-1,3-Dichloropropene	JJ. Dichlorodifluoromethane	BBB. 4-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	LLLL.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 16756A1
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?
- Y N N/A Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?
- Y N N/A Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation?__________
- Y N N/A Did the initial calibration meet the acceptance criteria?
- Y N N/A Were all %RSDs and RRFs within the validation criteria of ≤30 %RSD and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤30.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	2/28/07	ICAL-60	M		0.037	7D03010-BLK1,	J/UJ/A
						2,3 ~~7,8~~ All	

LDC #: 16756A1
SDG #: 16C305B

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: FT
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?

Y N N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <25.0%)	Finding RRF (Limit: >0.05)	Associated Samples	Qualifications
	4/3/07 9:13AM	ccv	F	109.3		All + 7D03010-BLK1	J / UJ / A
			M	70.3			
			~~OO~~	29.1			
			Z	63.9			

LDC #: 16756A1
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer:
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank associated with every sample in this SDG?
Y N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
Y N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 4/3/07
Conc. units: ng/L
Associated Samples: All

Compound	Blank ID	Sample Identification								
	7003010-BLK1	BLK 1	1 (4X)	2	3 (5X)					
Tetrahydrofuran	8.04		22 J 40U	-	27 J 50U					
~~Methylene chloride~~	0.480		(17)	(58)	(37)					
~~Acetone~~ S										
CRQL										

Blank analysis date:
Conc. units:
Associated Samples:

Compound	Blank ID	Sample Identification								
Methylene chloride										
Acetone										
CRQL										

All results were qualified using the criteria stated below except those circled.

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 16756A1
SDG #: pw cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		7D03010-BS1	F	263 (30-140)	( )	( )	All+BIK	J/P det
			M	237 (40-140)	( )	( )		
			MM	138 (50-135)	( )	( )		
			Z	211 (45-140	( )	( )		
			Y	144 (45-140)	( )	( )		
			BB	134 (55-130	( )	( )		
			XX	136 (60-130	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC #: 16756A1
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 6 of 7
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs
X = Mean of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (10 std)	Recalculated RRF (10 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL-60	2/28/07	Methylene chloride (1st internal standard)	0.436	0.436	0.474	0.474	7.78	7.78
			Trichlorethene (2nd internal standard)	0.314	0.314	0.331	0.331	5.92	5.92
			Ethyl Benzene ~~Toluene~~ (3rd internal standard)	1.589	1.589	1.623	1.623	4.92	4.92
2			1,2-DCB ~~Methylene chloride~~ (1st internal standard)	1.306	1.306	1.314	1.314	10.24	10.24
			Trichlorethene (2nd internal standard)						
			Toluene (3rd internal standard)						
3	ICAL-34	3/29/07	Vinyl ~~Methylene~~ chloride (1st internal standard)	0.528	0.528	0.473	0.43	6.27	6.27
			Trichlorethene (2nd internal standard)						
			Toluene (3rd internal standard)						
4			Methylene chloride (1st internal standard)						
			Trichlorethene (2nd internal standard)						
			Toluene (3rd internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 16756A1
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	ccv 9:13	4/3/07	Methylene chloride (1st internal standard)	0.474	0.468	0.468	1.3	1.3
			Trichlorethene (2nd internal standard)	0.331	0.357	0.357	7.9	7.9
			~~Toluene~~ Ethyl Benzene (3rd internal standard)	1.623	1.767	1.767	8.9	8.9
2			~~Methylene chloride~~ 1,2 DCB (1st internal standard)	1.314	1.403	1.403	6.8	6.8
			Trichlorethene (2nd internal standard)					
			Toluene (3rd internal standard)					
3	ccv 7:22	4/3/07	~~Methylene~~ Vinyl chloride (1st internal standard)	0.473	0.455	0.455	3.8	3.8
			~~Trichlorethene~~ (2nd internal standard)					
			~~Toluene~~ (3rd internal standard)					
4			Methylene chloride (1st internal standard)					
			Trichlorethene (2nd internal standard)					
			Toluene (3rd internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 16756A1
SDG #: all cover

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer:
2nd reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #3

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8	25.0	27.33	109	109	0
Bromofluorobenzene	↓	25.42	102	102	↓
1,2-Dichloroethane-d4					
Dibromofluoromethane		27.33	109	109	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

LDC #: 16756A1
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Page: 1 of 1
Reviewer: 5
2nd Reviewer: 2

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = | LCS - LCSD | * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: 7D03010-BS1

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene	25.0	NA	24.2	NA	97	97				
Trichloroethene			24.8		99	99				
Benzene			25.3		101	101				
Toluene			25.3		101	101				
Chlorobenzene			26.2		105	105	NA			

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 16756A1
SDG #: 1QC3058

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. #3 . 0QQ:

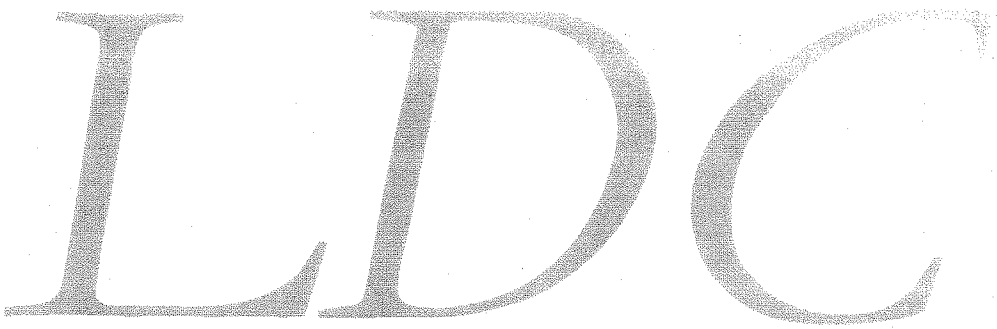
Conc. = $\frac{(666437)(25)(5)}{(485530)(0.516)(\quad)(\quad)}$

= 330 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Boeing Realty Corp. Bldg. C-6 Facility
Data Validation Reports
LDC# 16756

Dissolved Metals



Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing Realty Corp. C-6 Facility

Collection Date: November 21, 2006

LDC Report Date: May 11, 2007

Matrix: Water

Parameters: Dissolved Manganese

Validation Level: Tier 1, 2, & 3

Laboratory: TestAmerica

Sample Delivery Group (SDG): IQC3058

Sample Identification

IRZB0081_WG032807_0001
CMW026_WG032807_0001*
IRZB0095_WG032807_0001**
IRZB0081_WG032807_0001MS
IRZB0081_WG032807_0001MSD

*Indicates sample underwent Tier 2 review
**Indicates sample underwent Tier 3 review
All other samples underwent Tier 1 review

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Dissolved Manganese.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent a Tier 3 review. A Tier 2 or Tier 1 review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Tier 2 or Tier 1 criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

Calibration data were not reviewed for Tier 1.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

XI. Sample Result Verification

All sample result verifications were acceptable for samples on which a Tier 3 review was performed. Raw data were not evaluated for the samples reviewed by Tier 2 or Tier 1 criteria.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

No field blanks were identified in this SDG.

Boeing Realty Corp. C-6 Facility
Dissolved Manganese - Data Qualification Summary - SDG IQC3058

No Sample Data Qualified in this SDG

Boeing Realty Corp. C-6 Facility
Dissolved Manganese - Laboratory Blank Data Qualification Summary - SDG IQC3058

No Sample Data Qualified in this SDG

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

TAIT Environmental/Boeing
701 N. Parkcenter Drive
Santa Ana, CA 92705
Attention: Mehmet Pehlivan

Project ID: Boeing C-6 Torrance
EM2727
Report Number: IQC3058

Sampled: 03/28/07
Received: 03/28/07

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC3058-05 (IRZB0081_WG032807_0001 - Water)									
Reporting Units: mg/l									
Manganese	EPA 6010B-Diss	7C29129	0.0070	0.020	**2.0**	1	03/29/07	03/29/07	
Sample ID: IQC3058-06 (CMW026_WG032807_0001 - Water)									
Reporting Units: mg/l									
Manganese	EPA 6010B-Diss	7C29129	0.0070	0.020	**1.9**	1	03/29/07	03/29/07	
~~**Sample ID: IQC3058-07 (IRZCMW003_WG032807_0001 - Water)**~~									
Reporting Units: mg/l									
~~**Manganese**~~	~~EPA 6010B-Diss~~	~~7C29129~~	~~0.0070~~	~~0.020~~	~~**0.30**~~	~~1~~	~~03/29/07~~	~~03/29/07~~	
Sample ID: IQC3058-08 (IRZB0095_WG032807_0001 - Water)									
Reporting Units: mg/l									
Manganese	EPA 6010B-Diss	7C29129	0.0070	0.020	**1.9**	1	03/29/07	03/29/07	
~~**Sample ID: IQC3058-09 (IRZCMW004_WG032807_0001 - Water)**~~									
Reporting Units: mg/l									
~~**Manganese**~~	~~EPA 6010B-Diss~~	~~7C29129~~	~~0.0070~~	~~0.020~~	~~**0.21**~~	~~1~~	~~03/29/07~~	~~03/29/07~~	

TestAmerica - Irvine, CA
Nicholas Marz
Project Manager

3/30/07

LDC #: 16756A4
SDG #: IQC3058
Laboratory: Test America

VALIDATION COMPLETENESS WORKSHEET
Tier 1/2/3

Date: 5/11/07
Page: 1 of 1
Reviewer: W
2nd Reviewer: A

METHOD: Dissolved Mn (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/28/07
II.	Calibration	A	Not reviewed for Tier I validation.
III.	Blanks	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	A	
VI.	Duplicate Sample Analysis	N	
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	Not utilized
IX.	Furnace Atomic Absorption QC	N	
X.	ICP Serial Dilution	N	Not performed
XI.	Sample Result Verification	A	Not reviewed for Tier I & II validation.
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	N	
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:* Indicates sample underwent ~~Tier I~~ II validation, **Indicates sample underwent Tier III validation

A2

1	IRZB0081_WG032807_0001	11		21		31	
2	CMW026_WG032807_0001	12		22		32	
3	IRZB0095_WG032807_0001**	13		23		33	
4	IRZB0081_WG032807_0001MS	14		24		34	
5	IRZB0081_WG032807_0001MSD	15		25		35	
6	PB	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 16756 Af
SDG #: Cee Cove

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: MM
2nd Reviewer: AC

Method: Metals (EPA SW 846 Method 6010/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury and 85-115% for cyanide) QC limits?	✓			
Were all initial calibration correlation coefficients > 0.995? (Level IV only)	✓			
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
IV. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
V. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were < 5X the RL.	✓			
VI. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			
VII. Furnace Atomic Absorption QC				
If MSA was performed, was the correlation coefficients > 0.995?			✓	
Do all applicable analysies have duplicate injections? (Level IV only)			✓	
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only)			✓	
Were analytical spike recoveries within the 85-115% QC limits?			✓	

LDC #: 16756A4
SDG #: Cell cover

VALIDATION FINDINGS CHECKLIST

Reviewer: JM
2nd Reviewer: A

Validation Area	Yes	No	NA	Findings/Comments
VII. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the IDL?		✓		
Were all percent differences (%Ds) < 10%?			✓	
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			✓	
VIII. Internal standards (EPA SW-846 Method 6020)				
Were all the percent recoveries (%R) within the 30-120% of the intensity of the internal standard in the associated initial calibration?			✓	
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall Assessment of Data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XIII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 16756 A4
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: MJ
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
ICV	ICP (Initial calibration)	Mn	1.97	2	98	NR	Y
	GFAA (Initial calibration)						
	CVAA (Initial calibration)						
CCV	ICP (Continuing calibration)	Mn	1.023	1	102	NR	Y
	GFAA (Continuing calibration)						
	CVAA (Continuing calibration)						
	Cyanide (Initial calibration)						
	Cyanide (Continuing calibation)						

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

CALCLC.4SW

LDC #: 16756A4

SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: MM

2nd Reviewer: AL

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recaluculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$

Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interferance check	Mn	0.4985	0.5	100	NR	Y
LCS	Laboratory control sample		1.029	1	103	103	
4	Matrix spike		(SSR-SR) 1.081	1	108	107	
415	Duplicate		3.043	3.072	1	1	Y
MB	ICP serial dilution						

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 16756A4
SDG #: Cel cover

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: MV
2nd reviewer: M

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for 3 were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)(\%S)}$

Recalculation:

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor
%S = Decimal percent solids

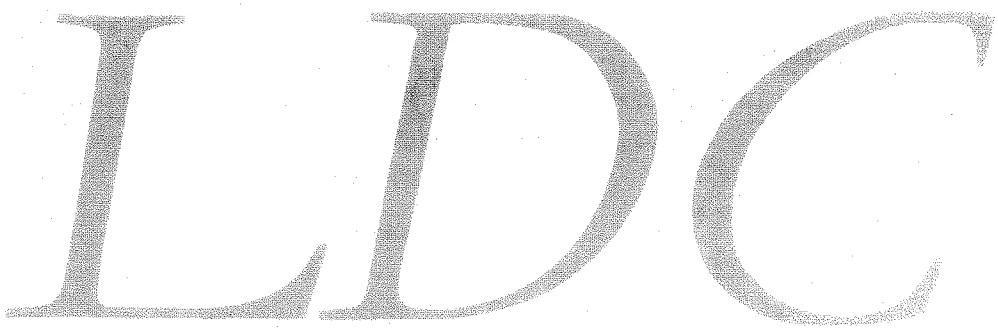
From the raw data
Mn = 1.9 mg/L

Sample ID	Analyte	Reported Concentration (mg/L)	Calculated Concentration (mg/L)	Acceptable (Y/N)
3	Mn	1.9	1.9	Y

RECALC.4S2

Boeing Realty Corp. Bldg. C-6 Facility
Data Validation Reports
LDC# 16756

Wet Chemistry



Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing Realty Corp., Bldg C-6 Facility

Collection Date: March 28, 2007

LDC Report Date: May 11, 2007

Matrix: Water

Parameters: Wet Chemistry

Validation Level: Tier 1, 2, & 3

Laboratory: TestAmerica

Sample Delivery Group (SDG): IQC3058

Sample Identification

IRZB0081_WG032807_0001
CMW026_WG032807_0001*
IRZB0095_WG032807_0001**

*Indicates sample underwent Tier 2 review
**Indicates sample underwent Tier 3 review
All other samples underwent Tier 1 review

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride Nitrate, Nitrite, Sulfate, and Orthophosphate, EPA Method 310.1 for Alkalinity, EPA Method 350.3 for Ammonia as Nitrogen, EPA Method 376.2 for Sulfide, and EPA Method 415.1 for Total Organic Carbon.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a Tier 3 review. A Tier 2 or Tier 1 review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Tier 2 or Tier 1 criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

Initial calibration data were not reviewed for Tier I.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

Calibration verification data were not reviewed for Tier I.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
MB	Ammonia as N	0.0783 mg/L	All samples in SDG IQC3058
ICB/CCB	Ammonia as N	0.1038 mg/L	CMW026_WG032807_0001* IRZB0095_WG032807_0001**

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
IRZB0095_WG032807_0001**	Ammonia as N	0.35 mg/L	0.35U mg/L

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

All sample result verifications were acceptable for samples on which a Tier 3 review was performed. Raw data were not evaluated for the samples reviewed by Tier 2 or Tier 1 criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Boeing Realty Corp., Bldg C-6 Facility
Wet Chemistry - Data Qualification Summary - SDG IQC3058

No Sample Data Qualified in this SDG

Boeing Realty Corp., Bldg C-6 Facility
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG IQC3058

SDG	Sample	Analyte	Modified Final Concentration	A or P
IQC3058	IRZB0095_WG032807_0001**	Ammonia as N	0.35U mg/L	A

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

TAIT Environmental/Boeing
701 N. Parkcenter Drive
Santa Ana, CA 92705
Attention: Mehmet Pehlivan

Project ID: Boeing C-6 Torrance
EM2727
Report Number: IQC3058

Sampled: 03/28/07
Received: 03/28/07

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC3058-05 (IRZB0081_WG032807_0001 - Water)									
Reporting Units: mg/l									
Alkalinity as CaCO3	EPA 310.1	7D05119	2.0	2.0	**550**	1	04/05/07	04/05/07	
Ammonia-N	EPA 350.3	7D09073	0.70	5.0	**48**	10	04/09/07	04/09/07	
Chloride	EPA 300.0	7C28043	5.0	25	**350**	50	03/28/07	03/28/07	
Nitrate-NO3	EPA 300.0	7C28043	0.25	0.50	ND	1	03/28/07	03/28/07	
Nitrite-NO2	EPA 300.0	7C28043	0.30	0.50	ND	1	03/28/07	03/28/07	
Orthophosphate - PO4	EPA 300.0	7C28043	0.40	0.50	ND	1	03/28/07	03/28/07	
Sulfate	EPA 300.0	7C28043	0.15	0.50	**5.0**	1	03/28/07	03/28/07	
Sulfide	EPA 376.2	7D04112	0.010	0.10	ND	1	04/04/07	04/04/07	
Total Organic Carbon	EPA 415.1	7D03155	2.5	5.0	**26**	5	04/03/07	04/03/07	
Sample ID: IQC3058-06 (CMW026_WG032807_0001 - Water)									
Reporting Units: mg/l									
Alkalinity as CaCO3	EPA 310.1	7D05119	2.0	2.0	**360**	1	04/05/07	04/05/07	
Ammonia-N	EPA 350.3	7D09073	0.070	0.50	**1.8**	1	04/09/07	04/09/07	
Chloride	EPA 300.0	7C28043	5.0	25	**220**	50	03/28/07	03/28/07	
Nitrate-NO3	EPA 300.0	7C28043	0.25	0.50	ND	1	03/28/07	03/28/07	
Nitrite-NO2	EPA 300.0	7C28043	0.30	0.50	ND	1	03/28/07	03/28/07	
Orthophosphate - PO4	EPA 300.0	7C28043	0.40	0.50	ND	1	03/28/07	03/28/07	
Sulfate	EPA 300.0	7C28043	0.15	0.50	**24**	1	03/28/07	03/28/07	
Sulfide	EPA 376.2	7D04112	0.010	0.10	**0.092**	1	04/04/07	04/04/07	J
Total Organic Carbon	EPA 415.1	7D03155	0.50	1.0	**9.4**	1	04/03/07	04/03/07	
~~**Sample ID: IQC3058-07 (IRZCMW003_WG032807_0001 - Water)**~~									
Reporting Units: mg/l									
Alkalinity as CaCO3	EPA 310.1	7D05119	2.0	2.0	**180**	1	04/05/07	04/05/07	
Ammonia-N	EPA 350.3	7D09073	0.070	0.50	**0.24**	1	04/09/07	04/09/07	B, J
Chloride	EPA 300.0	7C28043	5.0	25	**110**	50	03/28/07	03/28/07	
Nitrate-NO3	EPA 300.0	7C28043	0.25	0.50	**7.0**	1	03/28/07	03/28/07	
Nitrite-NO2	EPA 300.0	7C28043	0.30	0.50	ND	1	03/28/07	03/28/07	
Orthophosphate - PO4	EPA 300.0	7C28043	0.40	0.50	ND	1	03/28/07	03/28/07	
Sulfate	EPA 300.0	7C28043	7.5	25	**100**	50	03/28/07	03/28/07	
Sulfide	EPA 376.2	7D04112	0.010	0.10	**0.011**	1	04/04/07	04/04/07	J
~~**Total Organic Carbon**~~	~~EPA 415.1~~	~~7D04147~~	~~0.50~~	~~1.0~~	~~**0.66**~~	~~1~~	~~04/04/07~~	~~04/04/07~~	J

TestAmerica - Irvine, CA
Nicholas Marz
Project Manager

4/5/1407

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

TAIT Environmental/Boeing
701 N. Parkcenter Drive
Santa Ana, CA 92705
Attention: Mehmet Pehlivan

Project ID: Boeing C-6 Torrance
EM2727
Report Number: IQC3058

Sampled: 03/28/07
Received: 03/28/07

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result		Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC3058-08 (IRZB0095_WG032807_0001 - Water)										
Reporting Units: mg/l										
Alkalinity as CaCO3	EPA 310.1	7D05119	2.0	2.0	**630**		1	04/05/07	04/05/07	
Ammonia-N	EPA 350.3	7D09073	0.070	0.50	**0.35**	U	1	04/09/07	04/09/07	B, J
Chloride	EPA 300.0	7C28043	5.0	25	**300**		50	03/28/07	03/28/07	
Nitrate-NO3	EPA 300.0	7C28043	0.25	0.50	**0.51**		1	03/28/07	03/28/07	
Nitrite-NO2	EPA 300.0	7C28043	0.30	0.50	ND		1	03/28/07	03/28/07	
Orthophosphate - PO4	EPA 300.0	7C28043	0.40	0.50	ND		1	03/28/07	03/28/07	
Sulfate	EPA 300.0	7C28043	0.15	0.50	**21**		1	03/28/07	03/28/07	
Sulfide	EPA 376.2	7D04112	0.20	2.0	**2.3**		20	04/04/07	04/04/07	
Total Organic Carbon	EPA 415.1	7D04147	0.50	1.0	**10**		1	04/04/07	04/04/07	
~~**Sample ID: IQC3058-09 (IRZCMW004_WG032807_0001 - Water)**~~										
Reporting Units: mg/l										
Alkalinity as CaCO3	EPA 310.1	7D05119	2.0	2.0	**350**		1	04/05/07	04/05/07	
Ammonia-N	EPA 350.3	7D09073	0.070	0.50	~~**0.12**~~		1	04/09/07	04/09/07	B, J
Chloride	EPA 300.0	7C28043	5.0	25	**380**		50	03/28/07	03/29/07	
Nitrate-NO3	EPA 300.0	7C28043	0.25	0.50	**15**		1	03/28/07	03/29/07	
Nitrite-NO2	EPA 300.0	7C28043	0.30	0.50	ND		1	03/28/07	03/29/07	
Orthophosphate - PO4	EPA 300.0	7C28043	0.40	0.50	ND		1	03/28/07	03/29/07	
Sulfate	EPA 300.0	7C28043	0.15	0.50	**32**		1	03/28/07	03/29/07	
Sulfide	EPA 376.2	7D04112	0.010	0.10	**0.051**		1	04/04/07	04/04/07	J
~~**Total Organic Carbon**~~	~~EPA 415.1~~	~~7D04147~~	~~0.50~~	~~1.0~~	~~**0.67**~~		~~1~~	~~04/04/07~~	~~04/04/07~~	J

TestAmerica - Irvine, CA
Nicholas Marz
Project Manager

RDC 1401

LDC #: 16756A6 **VALIDATION COMPLETENESS WORKSHEET** Date: 5/11/07
SDG #: IQC3058 Tier 1/2/3 Page: 1 of 1
Laboratory: Test America Reviewer: W
2nd Reviewer: W

METHOD: Chloride, ~~Nitrate-N~~, ~~Nitrite-N~~, Sulfate, ~~Orthophosphate-P~~ (EPA Method 300.0), Sulfide (EPA Method 376.2), TOC (EPA Method 415.1), ~~Metabolic Acids (EPA Method 300.0)~~ NH3-N (EPA 350.3), Alkalinity (EPA 310.1)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/28-07
IIa.	Initial calibration	A	Not reviewed for Tier I validation.
IIb.	Calibration verification	A	Not reviewed for Tier I validation.
III.	Blanks	SW	
IVa.	Matrix Spike/(Matrix Spike) Duplicates	A	MS/MSD/Dup.
IVb.	Laboratory control samples	A	LCS
V.	Sample result verification	A	Not reviewed for Tier I & II validation.
VI.	Overall assessment of data	A	
VII.	Field duplicates	N	
VIII.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:* Indicates sample underwent Tier II validation, **Indicates sample underwent Tier III validation

1	IRZB0081_WG032807_0001	11		21		31	
2	CMW026_WG032807_0001*	12		22		32	
3	IRZB0095_WG032807_0001**	13		23		33	
4	MB	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes:

LDC #: 16936A6
SDG #: See Cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 1
Reviewer: MY
2nd Reviewer: [illegible]

Method: Inorganics (EPA Method See Cover

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required? (Level IV only)			✓	
Were balance checks performed as required? (Level IV only)			✓	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
IV. Matrix Spike/Matrix Spike Duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			Non-client
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		J
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were < 5X the CRDL.	✓			
V. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 16756A6
SDG #: Cell cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 1
Reviewer: MG
2nd Reviewer: M

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall Assessment of Data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field Duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
X. Field Blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 16786A6
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MY
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

Sample ID	Parameter
1-3	pH TDS (Cl) F (NO3) (NO2) (SO4) (PO4) (ALK) CN⁻ (NH3) TKN (TOC) CR6+ (S)
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+
	pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN⁻ NH3 TKN TOC CR6+

Comments:

METHODS.6

LDC #: 16756A6
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Blanks

Reviewer: MM
2nd Reviewer:

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
(Y) N N/A Were all samples associated with a given method blank?
(Y) N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: mg/L **Associated Samples:** MB: All ; ICB/CCB: 2, 3

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
	MB			3								
NH3-N	0.0783	0.1038	0.3915/0.519	0.3J								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the methoc blank concentration were qualified as not detected, "U".

LDC #: 16756A6
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: MY
2nd Reviewer: [illegible]

METHOD: Inorganics, Method See cover

The correlation coefficient (r) for the calibration of S was recalculated. Calibration date: 4/4/07

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found x 100 / True

Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of Analysis	Analyte		cord (mg/L) (units)	blw (units)	Recalculated r or %R	Reported r or %R	Acceptable (Y/N)
Initial calibration		Blank	0	0			
Calibration verification		Standard 1	0.168	0.055			
		Standard 2	0.324	0.145			
		Standard 3	0.54	0.251			
	S	Standard 4	1.08	0.447	r=0.99958	r=0.99958	Y
		Standard 5					
		Standard 6					
		Standard 7					
Calibration verification ccv	Soil	20	20.74		104	"	Y
Calibration verification ccv	Alkalinity	4	3.788		95	↓	↓
Calibration verification ccv	TOC	10	9.90		99	↓	↓

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 16756 A6
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: MM
2nd Reviewer: AC

METHOD: Inorganics, Method See cover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
LCS	Laboratory control sample	PO4	5.26	5.0	105	105	Y
160495 10%	Matrix spike sample	Tot	(SSR-SR) 5.5	5.0 ~~0.5~~	110	100	↓
160848 10%	Duplicate sample	Dis	1.82	1.80	0	0	↓

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.6

LDC #: 16756A6
SDG #: See cover

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: MM
2nd reviewer: A

METHOD: Inorganics, Method See cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for 3 reported with a positive detect were recalculated and verified using the following equation:

Concentration = Recalculation:

$TOC = \frac{Area - 96,918}{3/2,124}$

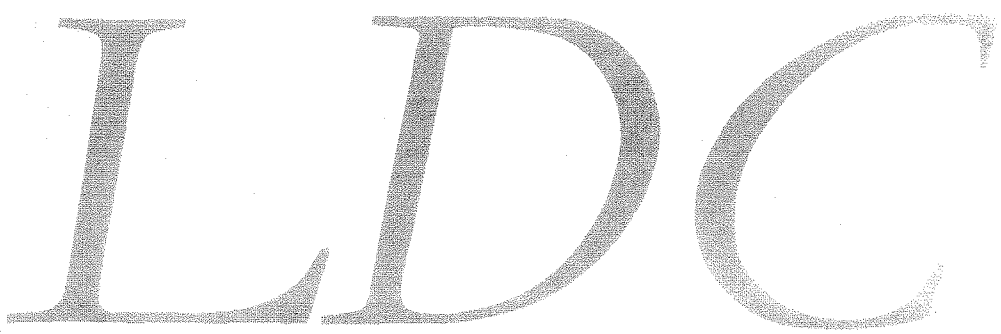
$TOC = \frac{330 - 96,918}{3/2,124}$ 210,211 mg/L

#	Sample ID	Analyte	Reported Concentration (mg/L)	Calculated Concentration (mg/L)	Acceptable (Y/N)
1	3	Alk	630	630	Y
		NH3-N	0.35	0.35	
		Cl	350	350	
		NO3	0.51	0.51	
		SO4	21	21	
		S	2.3	2.3	
		TOC	10	10	

Note:

Boeing Realty Corp. Bldg. C-6 Facility
Data Validation Reports
LDC# 16756

Dissolved Gases



Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Boeing Realty Corp., Bldg C-6 Facility

Collection Date: March 28, 2007

LDC Report Date: May 15, 2007

Matrix: Water

Parameters: Dissolved Gases

Validation Level: TIer 1, 2, & 3

Laboratory: TestAmerica, Inc./Air Technology Laboratory, Inc.

Sample Delivery Group (SDG): IQC3058/A7033001

Sample Identification

IRZB0081_WG032807_0001
CMW026_WG032807_0001*
IRZB0095_WG032807_0001**

*Indicates sample underwent Tier 2 review
**Indicates sample underwent Tier 3 review

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method RSK-175 for Dissolved Gases.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a Tier 3 review. Samples indicated by a single asterisk on the front cover underwent a Tier 2 review. Raw data were not evaluated for the samples reviewed by Tier 1 or 2 criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Initial calibration data were not reviewed for Tier 1.

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 25.0% QC limits.

Calibration verification data were not reviewed for Tier 1.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No dissolved gas contaminants were found in the method blanks.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Not required by the method.

b. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria on which a Tier 3 review was performed. Raw data were not evaluated for the samples reviewed by Tier 1 or 2 criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria on which a Tier 3 review was performed. Raw data were not evaluated for the samples reviewed by Tier 1 or 2 criteria.

VII. System Performance

The system performance was acceptable for samples on which a Tier 3 review was performed. Raw data were not evaluated for the samples reviewed by Tier 1 or 2 criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Boeing Realty Corp., Bldg C-6 Facility
Dissolved Gases - Data Qualification Summary - SDG IQC3058/A7033001

No Sample Data Qualified in this SDG

Boeing Realty Corp., Bldg C-6 Facility
Dissolved Gases - Laboratory Blank Data Qualification Summary - SDG IQC3058/A7033001

No Sample Data Qualified in this SDG

Client: TestAmerica
Attn: Nicholas Marz

Client's Project: IQC3058
Date Received: 3/30/2007
Matrix: Water
Units: ug/L

Dissolved Gases by EPA Procedure RSKSOP-175

RZB008 CMW026 RZB0095-WG025807-0001

Lab No.:		A7033001-01		A7033001-02		A7033001-03		A7033001-04		A7033001-05	
Client Sample I.D.:		IQC3058-05		IQC3058-06		IQC3058-07		IQC3058-08		IQC3058-09	
Date Sampled:		3/28/2007		3/28/2007		3/28/2007		3/28/2007		3/28/2007	
Date Analyzed:		4/2/2007		4/2/2007		4/2/2007		4/2/2007		4/2/2007	
Analyst Initials:		DT		DT		DT		DT		DT	
Data File:		02apr017		02apr018		02apr019		02apr020		02apr021	
QC Batch:		070402GC8A1		070402GC8A1		070402GC8A1		070402GC8A1		070402GC8A1	
Dilution Factor:		1.0		1.0		1.0		1.0		1.0	
ANALYTE	PQL	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results
Methane	1.0	1.0	6,800	1.0	13,000	1.0	3,200	1.0	17,000	1.0	1,600
Ethane	2.0	2.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	ND
Ethylene	3.0	3.0	8.7	3.0	ND	3.0	5.0	3.0	38	3.0	ND
Carbon Dioxide	200	200	200,000	200	95,000	200	12,000	200	130,000	200	68,000
Nitrogen	1,500	1,500	86,000	1,500	79,000	1,500	99,000	1,500	89,000	1,500	100,000

PQL = Practical Quantitation Limit
ND = Not Detected (Below RL)
RL = PQL X Dilution Factor

Reviewed/Approved By: _____ Date: 4/6/07
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

4/5/07

LDC #: 16756A51 **VALIDATION COMPLETENESS WORKSHEET** Date: 5/12/07

SDG #: IQC3058/A7033001 Tier 1/2/3 Page: 1 of 1

Laboratory: ~~Del Mar Analytical~~/Air Technology Laboratory, Inc. Reviewer: [illegible]

Test America 2nd Reviewer: [illegible]

METHOD: GC Dissolved Gases (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 3/28/07
IIa.	Initial calibration	A	Not reviewed for Tier I validation.
IIb.	Calibration verification	A	Not reviewed for Tier I validation. ccv ≤ 2x
III.	Blanks	A	
IVa.	Surrogate recovery	A	not Required
IVb.	Matrix spike/Matrix spike duplicates	N	client specified
IVc.	Laboratory control samples	A	LCS/D
V.	Target compound identification	A	Not reviewed for Tier I & II validation.
VI.	Compound Quantitation and CRQLs	A	Not reviewed for Tier I & II validation.
VII.	System Performance	A	Not reviewed for Tier I & II validation.
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: * Indicates sample underwent Tier I validation, **Indicates sample underwent Tier III validation

Water

5	1	IRZB0081_WG032807_0001*	11	MB - 4/2/07	21		31	
6	2	CMW026_WG032807_0001	12		22		32	
8	3	IRZB0095_WG032807_0001**	13		23		33	
	4		14		24		34	
	5		15		25		35	
	6		16		26		36	
	7		17		27		37	
	8		18		28		38	
	9		19		29		39	
	10		20		30		40	

Notes: _____

LDC #: 16756A51
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✗	✓		
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?	✓			
Did the initial calibration meet the curve fit acceptance criteria?	✓			
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ____%D or ____%R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ~~≤ 15%~~ ≤ 25.0 or percent recoveries 85-115%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓	✓		
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.				
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?			✓	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?				
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			

LDC #: 16756A51
SDG #: per cover

VALIDATION FINDINGS CHECKLIST

Page: 1 of 1
Reviewer: PT
2nd Reviewer: L

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds idetected in the field duplicates?			✓	
XV. Field blanks				
Were field blanks identified in this SDG?		✓		
Were target compounds detected in the field blanks?			✓	

LDC # 16752A5 1
SDG# per cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer:
2nd Reviewer:

METHOD: GC ~~Carbon Dioxide~~ Methan (Method RSK-175)

Parameter: Methane

Order of regression: 1

Date	Column/Detector	Compound	X Mass (ppmV)	Y Area
05/24/2007	TCD	methane		
			1000	1955
	Front		5000	10247
			10000	21952
			100000	235627
			500000	1325566.0

Regression Output:		Reported	
Constant	0.0	Constant	0.0
Std Err of Y Est	14704.732		
R Squared	0.99934	R Squared	0.9953
No. of Observations	5.000		
Degrees of Freedom	4.000		
X Coefficient(s)	2.63956E+000	X Coefficient(s)	2.63900E+000
Std Err of Coef.	0.03		

LDC # 16756A5/
SDG# see cover

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 5
2nd Reviewer: R

METHOD: GC ~~Carbon Dioxide~~ Methane (Method RSK-175)

Parameter: Methane

Order of regression: 1

Date	Column/Detector	Compound	X Mass (ppmV)	Y Area
05/23/2007	middle	methane	10	9309
			100	89744
			1000	863867
			5000	4401745
			10000	9597354
			3	5935.0

Regression Output:		Reported	
Constant	0.0	Constant	0.0
Std Err of Y Est	162740.545		
R Squared	0.99823	R Squared	0.99848
No. of Observations	6.000		
Degrees of Freedom	5.000		
X Coefficient(s)	9.43220E+002	X Coefficient(s)	9.4322E+002
Std Err of Coef.	14.50		

LDC #: 16756A51
SDG #: see cover

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC ____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	CCV	4/02/07	Methane (TCD)	10000.00	10551.837	10551.837	5.5	5.5
	9:49							
2	CCV	4/2/07	↓ (TCD)	10000	7790.082	7790.08	22.1	22.1
	4:52 PM							
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

BOE-C6-0054883

LDC #: 16756A51

SDG #: pw cover

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: [illegible]

2nd Reviewer: [illegible]

_____METHOD: _/_GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

Where SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS/D

Compound	Spike Added (ug/L)		Sample Conc. (ug/L)	Spike Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	--	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)	7000	7000	0	7484.3 108	6375.8	108	107	92	92	16	16
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 16756A51
SDG #: per cover

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: __ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration= $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. #3 Compound Name Methane

Concentration = _____

$y = 2.6396(x)$

$466538 = 2.6396(x)$

~~176748.359~~

$x = 176745.7 = 0.176746$ ppmv

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications
	mg/L in gas =	$\frac{0.176746(55.51)(16.04)(1000)}{41300} = 3.81$			
	in liquid =	$\frac{(0.176746)(16.04)(4)(1000)}{(22.4)(36)(298/273)} = 12.88$			
			Total = 16.69 mg/L = 17000 ug/L		

Comments: _____

BOE-C6-0054885

SAMPCALew.wpd